material that has an identical refractive index and a similar softening temperature to the buffer layer can, for example, be used as material. During production a second buffer layer, which serves to form the waveguide base, is then initially structured, for example onto the buffer layer, and subsequently the waveguide layer. The waveguide and the waveguide base are then formed by an etching process in a one-stage or a two-stage process. The one-stage process is used to form a waveguide and a waveguide base with identical widths. The one-stage process is used to form a waveguide and a waveguide base with different widths. Alternatively, only one buffer layer which is suitably doped in the thickness d can be used instead of the second buffer layer. The waveguide base is then formed from the doped region.

Claims

1. Optical waveguide which is structured in a core layer which is located on a buffer layer and is covered by a cladding layer, the buffer layer being applied to a substrate, characterised in that a strip-shaped waveguide base of thickness d is formed between buffer layer and optical waveguide, which waveguide base is completely covered laterally by the cladding layer and has the optical waveguide structured thereon, and the cladding layer consists of a vitreous material doped with foreign atoms to impart a birefringence-free property to the optical waveguide.

2. Optical waveguide according to claim 1, characterised in that the strip-shaped waveguide base is formed from the buffer layer.

3. Optical waveguide according to claim 1, characterised in that the strip-shaped waveguide base has the same width as the optical waveguide located thereon.

4. Optical waveguide according to claim 1, characterised in that the thickness d is 0.2 to 2 μm.

5. Optical waveguide according to claim 1, characterised in that the cladding layer consists of silicate.

6. Optical waveguide according to claim 1, characterised in that the cladding layer has boron atoms as foreign atoms.

7. Optical component which is constructed on a substrate and is provided at least partially with a cladding layer, characterised in that the optical component has an optical waveguide according to claim 1.

8. Process for producing an optical waveguide in which a buffer layer is applied to a substrate, to which buffer layer a core layer is applied, the optical waveguide being structured into the core layer, characterised in that a strip-shaped waveguide base of thickness d is formed from the buffer layer below the optical waveguide, and in that subsequently both the optical waveguide and the portion of the waveguide base not covered by the waveguide is covered by a cladding layer.

9. Process for producing an optical waveguide according to claim 8, characterised in that the cladding layer consists of a vitreous material and is doped with foreign atoms and the quantity of foreign atoms during doping of the cladding layer is selected as a function of the thickness d of the strip-shaped waveguide base, the fewer foreign atoms being used the greater the thickness d.

10. Process for producing an optical waveguide according to claim 8, characterised in that the thermal coefficient of expansion of the cladding layer is selected as a function of the thickness d of the strip-shaped waveguide base, it being selected so as to be the lower the greater the thickness d.

11. Process for producing an optical waveguide in which a first buffer layer is applied to a substrate, to which first buffer layer a core layer is applied, the optical waveguide being structured into the core layer, characterised in that a further buffer layer is applied to the first buffer layer before the core layer is applied, from which further buffer layer a strip-shaped waveguide base of thickness d is formed, and in that subsequently both the optical waveguide and the portion of the waveguide base not covered by the waveguide is covered by a cladding layer.